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May 24, 2019

Lori Stone
Cardno
1005 W. Washburn Pl
Saginaw, MI 48602

Work Order: **HS19051186**

Laboratory Results for: **Deer Park Fire 002 Day 15 16 17**

Dear Lori,

ALS Environmental received 3 sample(s) on May 21, 2019 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
Dane J. Wacasey

Client: Cardno
Project: Deer Park Fire 002 Day 15 16 17
Work Order: HS19051186

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS19051186-01	WW-20190517-002-Day 15	Water		17-May-2019 11:30	21-May-2019 09:13	<input type="checkbox"/>
HS19051186-02	WW-20190518-002-Day 16	Water		18-May-2019 11:30	21-May-2019 09:13	<input type="checkbox"/>
HS19051186-03	WW-20190519-002-Day 17	Water		19-May-2019 11:30	21-May-2019 09:13	<input type="checkbox"/>

Client: Cardno
Project: Deer Park Fire 002 Day 15 16 17
Work Order: HS19051186

CASE NARRATIVE

Work Order Comments

- Sampling dates differ :Day 15 chain of custody has 5/17/19, Label - 5/18/19 and Day 16 chain of custody is 5/18/19 Label - 5/19/19. Sample WW-20190519-002-Day 17 collection date adjusted to 5/20/19 per email from client.

GCMS Semivolatiles by Method SW8270

Batch ID: 141084

Sample ID: WW-20190517-002-Day 15 (HS19051186-01)

- Double surrogate.
-

Client: Cardno
Project: Deer Park Fire 002 Day 15 16 17
Sample ID: WW-20190517-002-Day 15
Collection Date: 17-May-2019 11:30

ANALYTICAL REPORT

WorkOrder:HS19051186
Lab ID:HS19051186-01
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 22-May-2019		Analyst: GEY	
Bis(chloromethyl)ether		U	0.00020	0.00020	mg/L	1	22-May-2019 14:39
Surr: 2-Fluorobiphenyl	85.3			40-125	%REC	1	22-May-2019 14:39
Surr: 4-Terphenyl-d14	96.9			40-135	%REC	1	22-May-2019 14:39
Surr: Nitrobenzene-d5	83.7			41-120	%REC	1	22-May-2019 14:39

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Cardno
Project: Deer Park Fire 002 Day 15 16 17
Sample ID: WW-20190518-002-Day 16
Collection Date: 18-May-2019 11:30

ANALYTICAL REPORT

WorkOrder:HS19051186
Lab ID:HS19051186-02
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 22-May-2019		Analyst: GEY	
Bis(chloromethyl)ether	U		0.00021	0.00021	mg/L	1	22-May-2019 14:58
Surr: 2-Fluorobiphenyl	106			40-125	%REC	1	22-May-2019 14:58
Surr: 4-Terphenyl-d14	117			40-135	%REC	1	22-May-2019 14:58
Surr: Nitrobenzene-d5	105			41-120	%REC	1	22-May-2019 14:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Cardno
Project: Deer Park Fire 002 Day 15 16 17
Sample ID: WW-20190519-002-Day 17
Collection Date: 19-May-2019 11:30

ANALYTICAL REPORT

WorkOrder:HS19051186
Lab ID:HS19051186-03
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 22-May-2019		Analyst: GEY	
Bis(chloromethyl)ether	U		0.00020	0.00020	mg/L	1	22-May-2019 15:18
Surr: 2-Fluorobiphenyl	101			40-125	%REC	1	22-May-2019 15:18
Surr: 4-Terphenyl-d14	113			40-135	%REC	1	22-May-2019 15:18
Surr: Nitrobenzene-d5	98.1			41-120	%REC	1	22-May-2019 15:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

WEIGHT LOG

Client: Cardno
Project: Deer Park Fire 002 Day 15 16 17
WorkOrder: HS19051186

Batch ID: 141084	Method: LOW-LEVEL SEMIVOLATILES BY 8270D	Prep: 3510_B_LOW
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SamplID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS19051186-01	1	980	1 (mL)	0.00102
HS19051186-02	1	970	1 (mL)	0.001031
HS19051186-03	1	980	1 (mL)	0.00102

Client: Cardno
Project: Deer Park Fire 002 Day 15 16 17
WorkOrder: HS19051186

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 141084	Test Name : LOW-LEVEL SEMIVOLATILES BY 8270D			Matrix: Water		
HS19051186-01	WW-20190517-002-Day 15	17 May 2019 11:30		22 May 2019 10:44	22 May 2019 14:39	1
HS19051186-02	WW-20190518-002-Day 16	18 May 2019 11:30		22 May 2019 10:44	22 May 2019 14:58	1
HS19051186-03	WW-20190519-002-Day 17	19 May 2019 11:30		22 May 2019 10:44	22 May 2019 15:18	1

Client: Cardno
 Project: Deer Park Fire 002 Day 15 16 17
 WorkOrder: HS19051186

QC BATCH REPORT

Batch ID: 141084 (0)		Instrument: SV-7		Method: LOW-LEVEL SEMIVOLATILES BY 8270D						
MBLK	Sample ID: MBLK-141084	Units: ug/L		Analysis Date: 22-May-2019 11:07						
Client ID:	Run ID: SV-7_338835	SeqNo: 5087753		PrepDate: 22-May-2019		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bis(chloromethyl)ether	U	0.20								
Surr: 2-Fluorobiphenyl	5.404	0.20	5	0	108	40 - 125				
Surr: 4-Terphenyl-d14	5.768	0.20	5	0	115	40 - 135				
Surr: Nitrobenzene-d5	5.032	0.20	5	0	101	41 - 120				

LCS	Sample ID: LCS1-141084	Units: ug/L		Analysis Date: 22-May-2019 14:19						
Client ID:	Run ID: SV-7_338835	SeqNo: 5087759		PrepDate: 22-May-2019		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bis(chloromethyl)ether	4.429	0.20	5	0	88.6	40 - 140				
Surr: 2-Fluorobiphenyl	5.192	0.20	5	0	104	40 - 125				
Surr: 4-Terphenyl-d14	5.263	0.20	5	0	105	40 - 135				
Surr: Nitrobenzene-d5	5.131	0.20	5	0	103	41 - 120				

LCSD	Sample ID: LCSD1-141084	Units: ug/L		Analysis Date: 22-May-2019 13:59						
Client ID:	Run ID: SV-7_338835	SeqNo: 5087758		PrepDate: 22-May-2019		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bis(chloromethyl)ether	4.208	0.20	5	0	84.2	40 - 140	4.429	5.13	20	
Surr: 2-Fluorobiphenyl	5.18	0.20	5	0	104	40 - 125	5.192	0.229	20	
Surr: 4-Terphenyl-d14	5.369	0.20	5	0	107	40 - 135	5.263	2	20	
Surr: Nitrobenzene-d5	5	0.20	5	0	100	41 - 120	5.131	2.59	20	

The following samples were analyzed in this batch:

HS19051186-01	HS19051186-02	HS19051186-03
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Client: Cardno
Project: Deer Park Fire 002 Day 15 16 17
WorkOrder: HS19051186

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Illinois	004438	29-Jun-2019
Louisiana	03087	30-Jun-2019
Dept of Defense	ANAB L2231	20-Dec-2021
Kansas	E-10352 2018-2019	31-Jul-2019
Oklahoma	2018-156	31-Aug-2019
North Carolina	624-2019	31-Dec-2019
Maryland	343, 2018-2019	30-Jun-2019
Arkansas	19-028-0	27-Mar-2020
Texas	TX104704231-19-23	30-Apr-2020

Client: Cardno
Project: Deer Park Fire 002 Day 15 16 17
Work Order: HS19051186

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS19051186-01	WW-20190517-002-Day 15	Login	21/05/2019 11:25:58	PMG	EXT035

Sample Receipt Checklist

Client Name: Cardno - Saginaw MI
Work Order: HS19051186

Date/Time Received: **21-May-2019 09:13**
Received by: **RPG**

Checklist completed by: Paresh M. Giga 21-May-2019
eSignature Date

Reviewed by: Andy C. Neir 21-May-2019
eSignature Date

Matrices: **WW**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	1 Page(s)
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	COC IDs:144085
Samplers name present on COC?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	1.3c U/c IR25		
Cooler(s)/Kit(s):	44979		
Date/Time sample(s) sent to storage:	5/21/19 11:35		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes: Sampling dates differ :
Day 15 COC - 5/17/19 Label - 5/18/19
Day 16 COC - 5/18/19 Label - 5/19/19
Logged in per COC

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:



Cincinnati, OH
+1 513 733 5336

Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511

Holland, MI
+1 616 399 6070

Chain of Custody Form

Page 1 of 1

COC ID: 144085

Houston, TX
+1 281 530 5656

Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903

Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168

York, PA
+1 717 505 5280

Customer Information			Project Information		ALS Project Manager:													ALS Work Order #:	
Purchase Order			Project Name		Parameter/Method Request for Analysis														
Work Order			Deer Park Fire		8270-Low-W-Bis(chloromethyl) ether														
Company Name			Project Number		B														
Send Report To			Bill To Company		C														
Address			Invoice Attn		D														
City/State/Zip			Address		E														
Phone			City/State/Zip		F														
Fax			Phone		G														
e-Mail Address			Fax		H														
Lori Stone @ Cardno.com			e-Mail Address		I														
J																			
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1	WW-20190517-002-DAY 15	5/17/19	1130	WW	8	2	X												
2	WW-20190518-002-DAY 16	5/18/19	1130	WW	8	2	X												
3	WW-20190519-002-DAY 17	5/20/19	1130	WW	8	2	X												
4																			
5																			
6																			
7																			
8																			
9																			
10																			
Sampler(s) Please Print & Sign			Shipment Method		Required Turnaround Time: (Check Box)				Other				Results Due Date:						
Stanley H. Hargis			FEDEX		<input type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input checked="" type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour														
Relinquished by:			Date:		Time:		Received by:		Notes:										
Stanley Hargis			5/17/19		1400		R. C. Clegg		5/21/19 09-13										
Relinquished by:			Date:		Time:		Received by (Laboratory):		Cooler ID										
							5/21/19 09-13		Cooler Temp										
Logged by (Laboratory):			Date:		Time:		Checked by (Laboratory):		QC Package: (Check One Box Below)										
									<input type="checkbox"/> Level II Std QC <input type="checkbox"/> TRRP Checklist										
									<input type="checkbox"/> Level III Std QC/Raw Data <input type="checkbox"/> TRRP Level IV										
									<input type="checkbox"/> Level IV SW846/CLP										
									<input type="checkbox"/> Other										
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035																			

- Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2012 by ALS Environmental.

44979 MAY 21 2019

ORIGIN ID:KLSA (000) 000-0000
VALVE PHIPPS
CARDNO
3700 W SAN HOUSTON PKWY S
STE 450
HOUSTON, TX 77042
UNITED STATES US

SHIP DATE: 20MAY19
ACTWGT: 53.20 LB
CAD: 6890875/USP02002
DIM: 23x13x15 IN
BILL THIRD PARTY

10 DANE WACASEY
ALS
10450 STANCLIFF RD STE 210

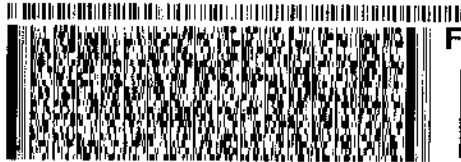
HOUSTON TX 77099

44979

(000) 000-0000

REF:

REF1:



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Express



TRK# 7873 7110 3910
0201

TUE - 21 MAY 10:30A
PRIORITY OVERNIGHT

43 SGRA

DSR AHS
77099

TX-US IAH

